



SAN BERNARDINO MICROWAVE SOCIETY, Incorporated

FOUNDED IN 1966

A NON-PROFIT AMATEUR TECHNICAL ORGANIZATION DEDICATED
TO THE ADVANCEMENT OF COMMUNICATIONS ABOVE 1000 MC.

W6IFE Newsletter

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The 7 **December** 2000 meeting of the SBMS will be about 1200 MHz EME equipment and challenges. The SBMS meets at the American Legion Hall 1024 Main Street (south of the 91 freeway) in Corona, CA at 1900 hours local time on the first Thursday of each month. Check out the SBMS web site at <http://www.ham-radio.com/sbms/>.

Last meeting Kurt K6RRA covered for Doug, K6JEY who was off teaching a college class. Kurt handed out a several page document on a 76 GHz transverter by Michael Kuhne, DB6NT. Kurt had a video that Doug had taken of Will, W6EOM and his shack with lots of millimeter hardware to show and tell about. Bill, WA6QYR talked about his trip to Microwave Update 2000. 18 people present.

Scheduling-

4 January 2001 PSK 31 the new narrowband mode for Microwaves?

1 February 2001 TBD

Wants and Gots

Wanted- 12-inch piece of WR90 with flanges Chuck, N6EQ 909-898-4940

Date: Saturday, November 18, 2000 Subject: 5 Mtr Satellite Dish Available Free

I have a 5 Mtr Spun Aluminum Solid Dish that is located in Fullerton, California. It is available for free. All you need to do it to take it down and remove it from the premises at your expense. However, it needs to be removed quickly. It will not be available for long. If anyone is interested, please get in touch with me via email. We can discuss the details over the phone. Thank You, John Lloyd, K7JL Lloyd@ussc.com

Activity reported at the 2 November SBMS meeting- Dick, WB6DNX cleaned up the shack and started a 23 GHz project; Alicia, KF6WMX is busy being a college student; Chuck, WA6EXV had built a dual 24/10 GHz feed from some 3/8 and _ water copper pipe for a prime star dish. It is similar to a design by W2IMU. Chuck had it to show and tell about. The patterns at 10 GHz look good and patterns at 24 GHz will come soon along with a report of how it works next month.; Bill, WA6QYR went to microwave update and had some purchased hardware to show; Ed, W6OYJ reworked his broken 1296 MHz radio with success and had a list of beacons from the WSWSS web page (www.wswss.org/beacon.html) s; Kerry, N6IZW brought a lot of Qualcomm parts to hand out, had an HP memory scope to sell, and was building some 1200 MHz transverters with some new Qualcomm surplus hardware (a project coming in the future), and had some hardcopy viewgraphs(presented at the Palomare Ham Club) about the laser pointer communicator project that appeared in last months newsletter, ; Chuck, N6EQ had a DB6NT 10 GHz transverter to show; Dave, WB6OVZ had a drill jig for making flanges to show; Mel, WA6JBD was working on a 2 GHz synthesizer with multiplier to 10 GHz and had been working with copper pipe as a source of waveguide; John, KJ6HZ got a MA-COM LO working; Kurt, K6RRA was working on a 1296 GHz transverter and a new dish and had gone to a San Diego Microwave Group meeting; Gene, WA6YOJ had a piece of 4 KHz piece of waveguide to show; Ken, WB6DTA did some 1296 radio work; Bob, W6SYA repackaged his 10 GHz transverter and had received one of the Ericson 130 w block amplifier "chips"; Peter, K6PTL got his work bench cleaned off; Dick, K6HIJ was still working on his 10 GHz pole mount transverter; Glenn, KE6HPZ went to Frazier Mountain to work the 2300 MHz event on 23 October.

Items of microwave interest

IT'S ALIVE! PHASE 3D IS NOW AO-40 Alive and well and in orbit around Earth, the satellite known for the past decade as "Phase 3D" has a new name. AMSAT-NA Board Chairman Bill Tynan, W3XO, this week announced that Phase 3D now will be known as AMSAT-OSCAR 40, or AO-40. "We have been calling it Phase 3D for far too long," Tynan said. "Henceforth it will take its place in the long line of OSCARs, satellites built by the Amateur Radio community for the Amateur Radio community throughout the world." Tynan said he got the official go-ahead from Phase 3D Project Leader Karl Meinzer, DJ4ZC, to assign an OSCAR number. It's been 40 years since the first OSCAR satellite launched. AMSAT-OSCAR 40 was dedicated to the memory of one of its principal builders, Werner Haas, DJ5KQ, and operates under the call sign DP0WH. Haas died earlier this year. A plaque aboard AO-40 is dedicated to his memory. Tynan, whose tenure as AMSAT-NA President covered the early years of the Phase 3D project, was overjoyed to see the satellite finally in orbit. "Congratulations and thanks to all who participated in any way to this wonderful achievement," he said. Following a one-day postponement, Phase 3D was successfully launched November 16 at 0107 UTC and placed into a geostationary transfer orbit, from which it will be nudged into its final high elliptical orbit. When the Ariane 5 launcher successfully deployed Phase 3D at 0153 UTC, cheers erupted from the AMSAT team monitoring the flight's progress in the Arianespace control room. The satellite is not expected to be ready for general use for about nine months.

"It was a textbook launch," said Phase 3D Mission Director and AMSAT-DL Executive Vice President Peter Guelzow, DB2OS. Guelzow, who's filling in for Phase 3D Project Leader Karl Meinzer, DJ4ZC, said the satellite appears to be in excellent health. A "general beacon" was transmitting on approximately 435.450 MHz. The AO-40 PSK beacon has been monitored on or about 145.898 MHz--slightly different from the expected frequency.

This week's Phase 3D launch culminated a decade of planning, design, construction and testing as well as an ambitious fundraising campaign. The ARRL was among the major contributors to the Phase 3D project. Newly elected AMSAT-NA President Robin Haighton, VE3FRH, hailed the news of the launch. "It expands the capabilities of radio amateurs to work with higher frequencies and develop advanced communication techniques," he said. "Once more, Amateur Radio operators will be at the leading edge of

experimentation in communications." The satellite now is in orbit some 585 miles above Earth at the closest point. Phase 3D's final elliptical orbital configuration will put the satellite some 2500 miles away from Earth at its nearest point, and some 29,500 miles at its farthest. At 630 kg (1380 lbs) and some 20 feet across when the solar panels are deployed, Phase 3D is the largest Amateur Radio satellite ever put into

space. Three other satellites, the giant PanAmSat PAS-1R communications satellite and the smaller STRV-1C and 1D mini-satellites, joined AMSAT Phase 3D--now AO 40--for the ride. For more information, visit the AMSAT-NA Web site, <http://www.amsat.org>.

ISS CREW CHECKS OUT HAM GEAR The International Space Station crew of US astronaut and ISS Expedition 1 Commander William "Shep" Shepherd, KD5GSL, and Russian cosmonauts Sergei Krikalev, U5MIR, and Yuri Gidzenko checked out the Amateur Radio on the International Space Station initial station ham gear last weekend. "With the successful execution of engineering test communications passes,

the Amateur Radio on the International Space Station project has passed a significant milestone," said ARISS team member Will Marchant, KC6ROL. Two initial Amateur Radio test passes were conducted via R3K at the Gagarin Cosmonaut Training Center in Star City near Moscow, with Russian ARISS delegate Sergej Samburov, RV3DR, at the controls. AMSAT Russia President Eugene Labutin, RA3APR, and Vladimir Zagainov, UA3DKR, also were on hand for the commissioning pass. A subsequent test pass via NN1SS at the NASA Goddard Space Flight Center was equally successful. The crew reiterated its interest and support for Amateur Radio activities on the ISS. School Amateur Radio contact schedules and casual QSOs are pending at this point, however, as the crew tackles a very busy work regime in space. Shepherd reports that all equipment aboard the ISS appears to be operating well, although he and the other crewmembers have complained about the noisy air conditioner. The crew spent its first week installing an oxygen generator, a carbon-dioxide removal unit and other life-support systems. Things will get busier when a Russian cargo ship filled with food, parts, trash bags and another air conditioner arrives November 17. The crew must unload the rocket, stow the gear, then fill the rocket with trash to jettison before the shuttle Endeavour lifts off at the end of the month with a new set of solar panels for the ISS.

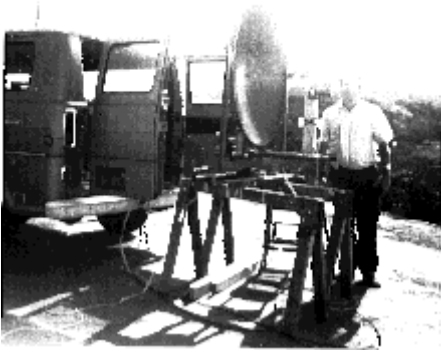
The crew is not getting Thanksgiving off, and crew members did not request turkey and the trimmings be sent into space. Students at the Burbank School in Burbank, Illinois, were tentatively scheduled to have the first Amateur Radio contact with the Expedition 1 crew next month. Another 18 schools are under consideration for ARISS school contacts. Tentative operating frequencies are: Worldwide downlink for voice and packet, 145.80 MHz; worldwide packet uplink, 145.99 MHz; Region 1 (Europe/Africa) voice uplink: 145.20 MHz; Region 2 and 3 voice uplink, 144.49 MHz. Crew members may use their personal call signs or one of the "club station" call signs issued for ISS use--NA1SS, RZ3DZR, or DL0ISS. The Keplerian elements bulletin from ARRL now includes data for the ISS. For more information, visit <http://ariss.gsfc.nasa.gov/>. Thanks to The ARRL Letter and ARRL.

Info from our friend's way up north-- I have placed a 10 GHz beacon in operation on Pillar Mountain today. Approx operating frequency pairing is 10.230/10.260 GHz. Total ERP is about 150mw. Polarization is vertical. The beacon is wideband FM with an MCW identifier. Altitude is 1180 feet above sea level. Let me know if you hear it. It's pointed at Diamond Ridge. But using a horn, it should get most of the peninsula. Curt AL7LQ

Curt is located on Kodiak Island about 133 miles southwest of Diamond Ridge [BO49][which lies just north of Homer, Alaska on the southern part of the Kenai Peninsula]. Pillar Mountain sits above the city of Kodiak [B037] on the NE corner of the island. Using Wingrid I have calculated bearings and distance. My home qth in Nikiski [BP40] is 233 miles from Pillar Mtn on nearly the same bearing as Diamond Ridge. I expect our best chance will be between Diamond Ridge and Pillar Mtn as the path is 99% over water. Gunplexers used on both

ends. I will also use a ssb 30 MHz IF Rx to assist in detecting the carrier. I will use an 18 inch offset dish [DSS]. Not sure when I will get down to Diamond Ridge [100 mile drive] next. I need to get a little more info from Curt. Eventually if we find a path I hope Curt will be able to set up for two-way. I will report how our efforts pan out. 73, Ed AL7EB

Web Article on "Cheap Yagis for VHF/UHF" Hello Microwavers, Back in 1993, Kent Britain WA5VJB published an article on easy to build "Cheap Yagis" for portable/rover operation. These antennas can be easily built on a wood boom using wire or welding rod for elements. The designs are for many different versions (# of elements) and dimensions are given for the following design frequencies: 144, 222, 421.5, 432, 435, 450, 902/903, and 1296 MHz. I built one of these, an 8-element version for 1296 in June. The boom is only 29 inches long. Chuck Swedblom, WA6EXV measured it on his antenna range and the forward gain is 12.7 dBi. Not bad for a couple of hours work. I also now have a supply of leftover 1/8-inch X 36 inch bronze welding rods to make more antennas. You can download Kent's article from the Clear Lake Amateur Radio Club's web pages. URL is <http://www.clarc.org/site.htm>, then select the "Cheap V/UHF Antennas" article. 73s from Ed, W6OYJ (858)453-4563



John Campbell, W6NVV with a polarplexer and 4 ft dish on Sierra Peak in the 1970's.

San Bernardino Microwave Society is a technical amateur radio club affiliated with the ARRL having a membership of over 90 amateurs from Hawaii and Alaska to the east coast. Dues are \$15 per year which includes a badge and monthly newsletter. Your mail label indicates your call followed by when your dues are due. Dues can be sent to the treasurer as listed under the banner on the front page.

If you have material you would like in the newsletter please send it to Bill WA6QYR at 247 Rebel Road Ridgecrest, CA 93555, bburns@ridgecrest.ca.us, or phone 760-375-8566. The newsletter is generated about the 15th of the month and put into the mail at least the week prior to the meeting. This is your newsletter. SBMS Newsletter material can be copied as long as SBMS is identified as source.

San Bernardino Microwave Society newsletter

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73's Bill

